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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/484,629	01/18/2000	Iain Clive Andrew Franklin Robinson	3265/85705	9911

29933 7590 05/22/2002

PALMER & DODGE, LLP
KATHLEEN M. WILLIAMS
111 HUNTINGTON AVENUE
BOSTON, MA 02199

EXAMINER
WOITACH, JOSEPH T

ART UNIT	PAPER NUMBER
1632	29

DATE MAILED: 05/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/484,629	Applicant(s) ROBINSON ET AL.	
	Examiner Joseph Woitach	Art Unit 1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 February 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-16,28 and 30-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-16,28 and 30-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

This application is an original application filed January 18, 2000, which claims benefit to foreign applications: PCT/GB99/02658, filed December 8, 1998; 9817566.4, filed August 12 1998; and 9910522.3, filed May 6, 1999, all filed in the United Kingdom.

Applicants amendment filed February 20, 2002, paper number 26 has been received and entered. The specification has been amended. Claims 1-7, 17-27 and 29 have been canceled. Claims 8-16 and 28 have been amended. Claims 30-34 have been added. Claims 8-16, 28 and 30-34 are pending and currently under examination.

Examiner notes that while both the marked and unmarked version of the claims are placed in the file, the unmarked version of the claims is entered into the application and represents the pending claims. Upon review of the two versions, Examiner has noted discrepancies between the two versions. For example, the marked copy of claim 9 recites '<u>or a sequence</u> which [are hybridizable....substantially] at least 90%' but the unmarked version recites 'or a sequence which **<u>is</u>** at least 90%' (emphasis added). Additionally, previously claim 10 recited (SEQ ID NO: 31), however neither version in the instant amendment recites this identifier. It is suggested that Applicants carefully review the submitted amendments for consistency between the marked and unmarked versions. Though Applicants' amendment is not completely in compliance, for the sake of compact prosecution, the unmarked version is currently under examination.

Sequence compliance

The specification is objected because this application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2), however, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth below. Specifically, in newly amended claim 10 and newly added claims 33 and 34 polynucleotide/amino acid sequences are present without SEQ ID NO identifiers. It is noted that previously claim 10 had the recited sequence identified as SEQ ID NO: 31, however the amendment filed February 20, 2002, paper number 26, deleted this from the claim. Identifying the sequences with the appropriate SEQ ID NO would obviate the basis of the objection.

Appropriate correction is required.

The absence of proper sequence listing did not preclude the examination on the merits however, **for a complete response to this office action, applicant must submit the required material for sequence compliance.**

Oath/Declaration

The new declaration filed February 20, 2002, paper number 24, is in compliance with 37 CFR 1.67(a). The objection to the declaration is withdrawn.

Priority

Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon application PCT/GB/99/02658 filed in Great Britain on August 12, 1999. The certified copy of the application filed March 29, 2002, paper number 27, as required by 35 U.S.C. 119(b) has been received and entered.

Specification

The disclosure is objected to because of the following informalities: The specification contains references to a URL. It is noted that Applicants have amended the specification to delete most of the hyperlinks, however Examiner has found that the specification still contains reference to a URL (for example: on page 12, line 11). Review of the entire specification is recommended.

The attempt to incorporate subject matter into the patent application by reference to a hyperlink an/or other forms of browser-executable code is considered to be an improper incorporation by reference (See MPEP 608.01(p)). Appropriate correction is required.

The amendment filed February 20, 2002, paper number 26, is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The amendment which adds the priority claim in the first line of the specification recites that each application 'are incorporated herein in their entirety' is new matter because the amendment was not present and thus, not part of the original disclosure. Further, it is noted that the original declaration does not indicate or provide for the incorporation of these references. Therefore, the attempt to incorporate the entirety of the information from the priority documents as recited by the new amendment is considered new matter because this was not part of the original disclosure. See MPEP 608.04.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

Claims 8-16 objected to because the claims are dependent on non-elected claims and for being improper form because a multiple dependent claim must refer to a single dependent claim

in the alternative is withdrawn. Applicants' amendments to the claims have obviated the basis of the rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 28 stands rejected and claims 31-34 are newly rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The amendments to claims 8-16 to recite specific percent sequence homology and deleting hybridization language has obviated the basis of the previous rejection, therefore the rejection as it drawn to these claims is withdrawn. However, claim 28 has been amended to recite and be drawn to only a '5'-TO-EST or sequence at least 90% homologous to 5'OT-EST' and claims 31-34 encompasses 'a mutant 5'OT-EST'. The specification provides a definition for a 5'OT-EST and gives reference to what it encompasses (middle page 7), however it does not

provide specific or particular sequences which uniquely define this term. Further, the specification teaches that 5'OT-EST encompasses other sequences which are derived from other species or which are homologous to 5'OT-EST. The specification teaches that homology is defined by homology screening (middle of page 7), however the specification does not provide for or define what the metes and bounds of 'homology' by any particular or specific parameters encompassed in any of the possible comparison methods. Further, the specification teaches that different search parameters and different programs can provide for different search results (pages 9-14). In view of the teachings of the instant specification, the polynucleotide sequences which encode the polypeptide sequences set forth in SEQ ID NOs: 2, 4, 6 and 16 and the polynucleotide sequences set forth in SEQ ID NOs: 1, 3 and 16, meet written description, however, 5'OT-EST or equivalents thereof recited and encompassed by the claims do meet the written description provision of 35 U.S.C. §112, first paragraph

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111 (Fed. Cir. 1991), clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" *Vas-Cath Inc. v. Mahurkar*, 19USPQ2d

at 1117. The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." *Vas-Cath Inc. v. Mahurkar*, 19USPQ2d at 1116.

The specification fails to describe any 5'OT EST polynucleotide sequence beside those defined by SEQ ID NOs in the present specification. The claimed invention as a whole is not adequately described if the claims require essential or critical elements which are not adequately described in the specification and which are not conventional in the art as of Applicants effective filing date. Possession may be shown by actual reduction to practice, clear depiction of the invention in a detailed drawing, or by describing the invention with sufficient relevant identifying characteristics (as it relates to the claimed invention as a whole) such that a person skilled in the art would recognize that the inventor had possession of the claimed invention. *Pfaff v. Wells Electronics, Inc.*, 48 USPQ2d 1641, 1646 (1998). In the instant case, the claimed embodiments of the nucleic acid encompassed by the term '5'OT-EST'and mutant thereof, lacks written description. The specification provides one example of truncated form of the 5'OT EST with a unique carboxyl terminal amino acid sequence which confers an activity in transgenic rats, however the specification fails to describe any species within the genus of a polynucleotides encompassed in the claims with particularity to indicate that Applicants had possession of the claimed invention. The specification does not describe what the endogenous form of 5'OT EST

does, nor what types of alterations to the polynucleotide sequence the artisan should make to generate the broad range of sequences encompassed by the claim. For example, while it is clear that the single form of 5'OT EST has a unique activity in the transgenic rat, there is no teaching to indicate if this is due to remaining truncated 5'OT EST, the lack of the 5'OT EST carboxyl terminal or the new sequence introduced by the deletion/frame shift in the transgene construct. Without guidance to the endogenous function of the 5'OT EST or guidance or the basis of the single 5' TO EST mutant activity, the artisan cannot define the metes and bounds of what is encompassed by substantially homologous and equivalents of the 5'OT EST. Further, even if the sequence was determined to be 'homologous', the artisan is left to guess if the polynucleotide would be encompassed by the claim sharing potentially only a small percentage of homology, and left to empirically test whether the 5'OT-EST has any of the activities ascribed in claims 31 and 32. The claimed invention as a whole is not adequately described if the claims require essential or critical elements which are not adequately described in the specification and which are not conventional in the art as of Applicants effective filing date. The skilled artisan cannot envision what changes can be made to the nucleic acid sequences and not affect the biological activity, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method. Adequate written description requires

more than a mere statement that it is part of the invention and reference to a potential method of isolating it. See *Fiers v. Revel*, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016 (Fed. Cir. 1991).

One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481, 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence. Analogously, in the instant case specific nucleic acid sequences are defined in the specification for separate species, however the sequences for other species are not defined, nor are other mutants or sequences which are homologous. The instant specification fails to provide adequate written description wherein the artisan simply given a polynucleotide sequence would be capable of identifying said sequence as a 5'OT-EST.

Therefore, only polynucleotide sequences which encode the polypeptide sequences set forth in SEQ ID NOs: 2, 4, 6 and 16 and the polynucleotide sequences set forth in SEQ ID NOs: 1, 3 and 16, meet the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-16, 28 and 31-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The basis of the previous rejections of record have been obviated by Applicants' amendments to the claims. However, the claim amendments have necessitated a new basis of rejection.

Claims 8-16, 28, 31 and 32 are vague and indefinite in the recitation of 'at least 90% homologous'. The specification does not specifically define 'homologous', however it defines 'substantially homologous' in reference to homology screening and that different screening methods, programs and parameters can be adjusted in such screening methods (see specification pages 7-14 for example). Further, depending on the program and/or parameters, the specification teaches one can obtain different homology results (see for example page 14; third full paragraph). The claims encompass the use of parameters which are not specifically defined and are subject to change depending on the method used to determine % homology, therefore the metes and bounds of the claim are not substantively nor clearly defined. The addition of '90%' or any percentage

does not further define the metes and bounds of the claim because the parameters of particular program can be adjusted wherein insertions and deletions can be made, or % homology is calculated by local similarities, where each change confers a potentially different search result. For example, SEQ ID NO: 2 is 200 amino acids long, it is unclear if a fusion protein which is 400 amino acids long, 100% homologous to SEQ ID NO: 2, but 50% homologous to the complete SEQ ID NO would meet the limitation of the claim since parameters of a given program can be changed and would result in the value of 50% homologous. Given that multiple parameters can be altered, each giving rise to a different search and search result, the metes and bounds of the claim is not defined and indefinite.

Claim 32 is unclear because the recitation of 'said animal' and 'said mutant' lack antecedent basis in claim 30 or independent claim 8. Amending the claim to be dependent on claim 31 would obviate the basis of this rejection. Additionally, claim 32 is vague and unclear because the limitation for an inherent affect of a particular mutant 5'OT-EST in a transgenic animal does not seem to further limit the nature of the polynucleotide of claims 30 or 8 (or claim 31). It is unclear if certain mutant 5'OT-ESTs *in vivo* contribute to the obesity and when in the context of a transgenic animal do not contribute a particular phenotype, or if all mutant forms would contribute to a particular phenotype *in vivo*. Claim 32 is unclear and confusing because it

is unclear how the claim further limit the claims upon which it depends because the polynucleotide always has the same inherent property independent of its intended context use.

Claim 33 and 34 are confusing in the recitation and dependence on claim 31, because the specification teaches that the specific sequences set forth in the claim are not mutant sequences and it is unclear if claims 33 and 34 encompass mutant sequences which comprise the recited sequences or if these sequences are representative of mutant sequences themselves.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8-12, 15, 16 and 28 stand rejected and claims 30-32 are newly rejected under 35 U.S.C. 102(b) as being anticipated by GenBank sequence entries: AA955566, AA421393, AA505752, AA421310, AA2422211, AA245389, AA104183, AA850004, H31115, or H31114.

Applicants provide a translation of AA24589 and point out this sequence and the other sequences set forth in the Genbank listings would produce sequences which are not 90%

identical to the sequences instantly claimed (emphasis added). Therefore, the sequence taught in the Genbank citations in the basis of the rejection do not anticipate the instant claims. See Applicants' amendment, pages 9-11. Applicants' arguments have been fully considered, but not found persuasive.

First it is noted that the claims recite 90% homologous, not identity and that the specification does not support the equivalence of the terms homology and identity. Further, claim 28 encompasses any probe capable of hybridizing to a 5'OT-EST. The claims are drawn to nucleic acid sequences encoding a 5'OT-EST polypeptide or mutant 5'OT-EST. As noted above in the basis of the 35 USC 112, second paragraph, the metes and bounds of what is encompassed by '90% homologous' is not clearly defined, and could reasonably be interpreted to encompass % homology of a given sequence for local similarity comprising any of the specific sequences recited in the instant claims. The specification teaches that the ESTs AA955566, AA421393, AA505752, AA421310, AA2422211, AA245389, AA104183, AA850004, H31115, and H31114, each encode a polypeptide which shares homology to the instantly claimed 5'OT EST. Thus, these sequences anticipate the claims. Claims 30-32 encompass the sequences of claim 8 and further setting forth inherent properties of said sequence in an *in vivo* context. The intended use limitation or the context of the particular polynucleotide claimed bears little weight on the

determination of patentability. In this case, for claims 31 and 32 the limitations for the modulation of obesity in an animal does not carry patentable weight in the determination of anticipation for the claimed products because a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In the instant case, any polynucleotide which shares homology to the 5'OT EST gene could be used for this intended purpose of generating a transgenic animal.

Accordingly, the GenBank entries anticipate the claimed invention.

Conclusion

No claim is allowed.

As noted in the previous office action, claims 13 and 14 are free of the art of the art of record because of the failure of the art to appreciate the presence of the 5'OT EST gene 13 kb upstream of the TO gene, or provide motivation to link this gene or gene product, described only

by EST sequences, with the TO or the AVP genes. The TO and AVP genomic sequences have been described, however these cloned sequences did not contain the 5' polynucleotide sequence which comprised the 5'OT EST gene described in the instant specification.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Woitach whose telephone number is (703)305-3732.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Reynolds, can be reached at (703)305-4051.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist Pauline Farrier whose telephone number is (703)305-3550.

Papers related to this application may be submitted by facsimile transmission. Papers should be faxed via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center numbers are (703)308-4242 and (703)305-3014.

Joseph T. Woitach

Deborah Crouch

DEBORAH CROUCH
PRIMARY EXAMINER
GROUP 1800/1630